

**REMARKS**

The Examiner is thanked for the due consideration given the application.

Claims 1-20 remain in this application. Claim 1 has been amended to better set forth the claimed invention.

No new matter is believed to be added to the application by this amendment.

**Art Rejections**

Claims 1-9, 12, 15-18 and 20 have been rejected under 35 USC §103(a) as being unpatentable YAMAGUCHI et al. (U.S. Publication 2002/0037458) in view of ARMAND (U.S. Patent 4,818,644).

Claims 10 and 11 have been rejected under 35 USC §103(a) as being unpatentable YAMAGUCHI et al. in view of ARMAND, and further in view of FLEISCHER et al. (U.S. Patent 6,225,009).

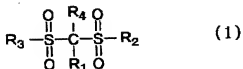
Claims 13 and 14 have been rejected under 35 USC §103(a) as being unpatentable YAMAGUCHI et al. in view of ARMAND, and further in view of UTSUGI et al. (U.S. Publication 2004/0043300).

Claim 19 has been rejected under 35 USC §103(a) as being unpatentable YAMAGUCHI et al. in view of ARMAND, and further in view of SHIOTA (U.S. Patent 5,795,674).

These rejections are respectfully traversed.

The present invention pertains to a secondary battery that includes an electrolyte solution that contains a compound represented by the general formula (1):

[Formula 1]



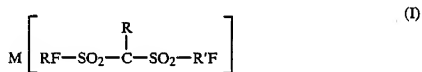
wherein  $\text{R}_1$  and  $\text{R}_4$  independently represent an atom or a group selected from a hydrogen atom, a **substituted** alkyl group having 1 to 5 carbon atoms, a substituted or unsubstituted alkoxy group having 1 to 5 carbon atoms, a substituted or unsubstituted fluoroalkyl group having 1 to 5 carbon atoms, a polyfluoroalkyl group having 1 to 5 carbon atoms,  $-\text{SO}_2\text{X}_1$ , wherein  $\text{X}_1$  is a substituted or unsubstituted alkyl group having 1 to 5 carbon atoms,  $-\text{SY}_1$ , wherein  $\text{Y}_1$  is a substituted or unsubstituted alkyl group having 1 to 5 carbon atoms,  $-\text{COZ}$ , wherein  $\text{Z}$  is a hydrogen atom or a substituted or unsubstituted alkyl group having 1 to 5 carbon atoms, and a halogen atom; and  $\text{R}_2$  and  $\text{R}_3$  independently represent an atom or a group selected from an **unsubstituted** alkyl group having 1 to 5 carbon atoms, a substituted or unsubstituted alkoxy group having 1 to 5 carbon atoms, a substituted or unsubstituted phenoxy group, a substituted or unsubstituted fluoroalkyl group having 1 to 5 carbon atoms, a substituted or unsubstituted fluoroalkoxy group having 1 to 5 carbon atoms, a polyfluoroalkoxy group having 1 to 5 carbon atoms, a hydroxyl group, a halogen atom,  $-\text{NX}_2\text{X}_3$ , wherein  $\text{X}_2$  and  $\text{X}_3$  independently

represent a hydrogen atom or a substituted or unsubstituted alkyl group having 1 to 5 carbon atoms, and  $-NY_2CONY_3Y_4$ , wherein  $Y_2$  to  $Y_4$  independently represent a hydrogen atom or a substituted or unsubstituted alkyl group having 1 to 5 carbon atoms.

As is set forth in independent claim 1, R3 and R4 are no longer represented by a polyfluoroalkyl group having 1 to 5 carbon atoms.

YAMAGUCHI et al. is utilized for teachings pertaining to a non-aqueous electrolyte secondary battery including an electrode material formed from a lithium-manganese composite oxide.

The Office Action turns to ARMAND for teachings pertaining to aprotic solvents and electrolytes dissolved therein. The Office Action specifically points to formula (I) of Armand, which is reproduced below.



This formula (I) of ARMAND has a central carbon with a single substituent, meaning that there must be a least one hydrogen substituted to this central carbon. This formula (I) of Armand also has end substituents RF which represent a perhalogenated group, preferably perfluorinated group having from 1 to 12 carbon atoms.

While the formula (I) of ARMAND is ion or ligand, the formula (1) of the present invention is molecule. Furthermore, R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> of amended claim 1 do not overlap with substitutions of the formula (I) of Armand. The formula (I) of Armand is different from the formula (1) of the present invention.

The other cited references also do not teach or suggest R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> of amended claim 1.

One of ordinary skill and creativity would thus not produce a claimed embodiment of the present invention from a knowledge of the applied art. A *prima facie* case of unpatentability has thus not been made.

These rejections are believed to be overcome, and withdrawal thereof is respectfully requested.

#### **Double Patenting Rejections**

Claims 1-9, 12, 15-18 and 20 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of co-pending Application No. 10/541,063 in view of YAMAGUCHI et al.

Claims 10 and 11 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of co-pending Application No. 10/541,063 in view of YAMAGUCHI et al. and FLEISCHER et al.

Claims 13 and 14 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as

being unpatentable over claim 13 of co-pending Application No. 10/541,063 in view of YAMAGUCHI et al. and UTSUGI et al.

Claim 19 has been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of co-pending Application No. 10/541,063 in view of YAMAGUCHI et al. and SHIOTA.

It is respectfully requested that action on the double patenting rejections be forestalled until the issue ripens and one of the co-pending applications matures into a patent.

**Conclusion**

The Examiner is thanked for considering the Information Disclosure Statements filed May 13, 2009, March 21, 2007 and June 14, 2006 and for making the references therein of record in the application.

Prior art of record but not utilized is believed to be non-pertinent to the instant claims.

As no issues remain, the issuance of a Notice of Allowability is respectfully solicited.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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/Robert E. Goozner/

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